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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Peng Guo

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EXAMINER

WEI, ZHENG

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,648	Applicant(s) GUO ET AL.	
	Examiner ZHENG WEI	Art Unit 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>06/20/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the application filed on 06/20/2006.
2. Claims 1-30 are pending and have been examined.

Oath/Declaration

3. The Office acknowledges receipt of a properly signed oath/declaration filed on June 20, 2006.

Information Disclosure Statement

4. The information disclosure statements filed 04/16/2008 has been placed in the application file and the information referred to therein has been considered.

Drawings

5. The drawings filed on June 20, 2006 are accepted by the Examiner.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 14-30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 14:

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Claim 14 recites a machine readable medium in page 8, line 19 which is defined in the specification including **“propagated signals (e.g., carrier waves, infrared signals, digital signals, etc.)”** ([emphasis added], see for example, paragraph [0011]). The signal or wave is only a form of energy that is not a tangible physical article or object and it does not fall within either of the two definitions of manufacture. Thus, under the Interim Guidelines such media do not fall within one of the four statutory classes of 35 U.S.C 101 Annex IV (c). Therefore, the above claim is non-statutory. For further information, see interim Guidelines for Examination of Patent Application for Patent Subject Matter Eligibility (Signed 26Oct2005) –OG Cite: 1300 OG 142.

<<http://www.uspto.gov/web/offices/com/sol/og/2005/week47/patgupa.htm>>

Claims 15-21:

Claims 15-21 are dependent claims of claim 14. These claims all fail to remedy the 35 U.S.C 101 nonstatutory problem of claim. Therefore, they are also rejected for the same reason.

--These rejections can be overcome by changing the “A machine readable medium” to “A machine readable storage medium” which is a tangible physical storage medium that can be used to store/record computer instruction or data. Therefore such machine readable storage medium is statutory.

Claim 22:

Claim 22 is directed to a system, which comprises a compiler, a loader, a dynamic compiler and a profiler. Such claimed modules can be reasonable

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interpreted as software program listings per se and it does not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized. Therefore, claim 22 is not statutory. See MPEP 2106.01(I)

Claims 23-30:

Claims 23-30 are dependent claims of claim 22. These claims all fail to remedy the 35 USC 101 nonstatutory problem of claim 22. Therefore, they are also rejected for the same reason.

--These rejections can be overcome by adding computer hardware components e.g., memory, and processor into the claims that permit the computer program's functionality to be realized.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Wu (Wu et al., US.2004/0103391 A1)

Claim 1:

Wu discloses a method comprising

- getting an object header from an object (see for example, Fig.6, step 300, checking “Header Encoded w/Object Type” and related text), and
- checking from the object header a result (step 306, “Result = 0?”) of a first time type checking (logically ANDing the type mask in the header) between a class of the object (object being tested) and a target class (target type) specified by a hotspot in the first time type checking (see for example, Fig.6, step 304, “Logically AND Type Mask w/Header” and related text) .

Claim 2:

Wu discloses the method of claim 1 further comprising

- determining whether the object header comprises an indicator (bit fields 202) that is asserted to indicate a first time type checking success between the object class and the target class associated with the indicator (see for example, Fig.6, step 306, “Result=0?” -> No ->step 310, "Return to Calling Routine" and related text; also see paragraph [0036], “On the other hand, if the processor 12 determines that the result of the logical ANDing is not equal to zero (i.e., that the object being type tested is of the target type or is

compatible with the target type...”).

Claim 3:

Wu discloses the method of claim 1 further comprising

- determining whether the object header comprises an indicator (bit fields 202) that is deasserted to indicate a first time type checking failure between the object class and the target class associated with the indicator (see for example, Fig.6, step 306, “Result=0?” -> Yes ->step 308, “Call Type Test Failure Routine” and related text; also see paragraph [0036], “If the processor 12 determines that the result of the logical ANDing is equal to zero (i.e., the object being type tested is not of the target type...”)

Claim 4:

Wu discloses the method of claim 1 further comprising

- skipping a second time type checking between the object class and the target class, in response to determining that the object header comprises an indicator that is asserted to indicate a first time type checking success (see for example, Fig.6, step 306, “Result=0?” -> No ->step 310, “Return to Calling Routine” and related text; also see paragraph [0036], “On the other hand, if the processor 12 determines that the result of the logical ANDing is not equal to zero (i.e., that the object being type tested is of the target type or is compatible with the target type...”); also see Fig.2, step 100, “Object Type

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=Target Type?" ->Yes -> step 102, "Return True to Calling Routine" (skipping a second time type checking in step 104))

Claim 5:

Wu discloses the method of claim 1 further comprising

- performing a second time type checking between the object class and the target class, in response to determining that the object header comprises an indicator that is deasserted to indicate a first time type checking failure (see for example, Fig.6, step 306, "Result=0?" -> Yes ->step 308, "Call Type Test Failure Routine" and related text; also see paragraph [0036], "If the processor 12 determines that the result of the logical ANDing is equal to zero (i.e., the object being type tested is not of the target type)..."; also see, Fig.2, step 100, "Object Type = Target Type?" ->No -> step 104 "Object Type = Rot Type?" and related text).

Claim 6:

Wu discloses the method of claim 1 further comprising

- detecting the hotspot (hot type) in the first time type checking by dynamic profiling (see for example, paragraph [0030], "...the plurality of bit fields 202 defined in the header 200 correspond to frequently or commonly used or 'hot types' of target objects..." and related text).

Claim 7:

Wu discloses a system, comprising

- a processor (processor 12) to get an object header (header) from an object, and obtain from the object header a result (encode type) of a first time type checking at a hotspot between a class of the object and a target class specified by the hotspot (see for example, Fig.1, element 12; also see, Fig.6, step 300, checking “Header Encoded w/Object Type” and related text; and
- a memory to save the target class (see for example, Fig.1, element 24, “System Memory” and related text).

Claim 8:

Wu discloses the system of claim 7, wherein the processor further to

- determine that the first time type checking at the hotspot is successful, in response to detecting that the object header comprises an indicator associated with the target class that has a first logic value (see for example, Fig.6, step 306, “Result=0?” -> No ->step 310, "Return to Calling Routine" and related text; also see paragraph [0036], “On the other hand, if the processor 12 determines that the result of the logical ANDing is not equal to zero (i.e., that the object being type tested is of the target type or is compatible with the target type...”).

Claim 9:

Wu discloses the system of claim 7, wherein the processor further to

- perform a second time type checking between the object class and the target class, in response to detecting that an indicator associated with the target class in the object header has a second logic value (see for example, Fig.6, step 306, "Result=0?" -> Yes ->step 308, "Call Type Test Failure Routine" and related text; also see paragraph [0036], "If the processor 12 determines that the result of the logical ANDing is equal to zero (i.e., the object being type tested is not of the target type)..."; also see, Fig.2, step 100, "Object Type = Target Type?" ->No -> step 104 "Object Type = Rot Type?" and related text).

Claim 10:

Wu discloses the system of claim 7, wherein the processor further to

- traverse a class hierarchy associated with the class of the object, in response to determining that the first time type checking at the hotspot is failed (see for example, Fig.2, step 100 -> Step 104 ->step 108 ->step 100, traversing a class hierarchy to root class and checking root class type and related text).

Claim 11:

Wu discloses the system of claim 7, wherein the processor further to

- assert an indicator associated with the target class in the object header, in response to determining in a second time type checking at the hotspot that the class of the object and the target class match a type checking condition

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(see for example, Fig.2, step 100, "Object Type = Target Type?" -> Yes -> step 102, "Return True to Calling Routine" and related text).

Claim 12:

Wu discloses the system of claim 7, wherein the processor further to

- return a signal indicating that the type checking is successful, in response to determining that the class of the object and the target class match a predetermined criterion (see for example, Fig.6, step 310, "Return to Calling Routine" and related text).

Claim 13:

Wu discloses the system of claim 7, wherein the memory further to save a

beginning address of a handle of the target class, and wherein the processor

further to detecting the hotspot by dynamic profiling (see for example, Fig.3 and

Fig.4, example code for executing by processor with memory, "Push

target_type", "Push obj", "call instanceof()", and related text; also see paragraph

[0030], "...the plurality of bit fields 202 defined in the header 200 correspond to

frequently or commonly used or 'hot types' of target objects..." and related text).

Claims 14-21:

Claims 14-21 are computer program products version of the claimed method,

wherein all claimed limitation functions have been addressed in claims 1-13

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above respectively. It is well known in the computer art that such method steps can be implemented as computer program and can be practiced and /or stored on a machine readable medium and executed by the system in claims 7-13.

Thus, they are also anticipated by Wu's disclosure. (see for example, p.5, right column, lines 7-27, "A machine readable medium" and related text).

Claims 22-30:

Claims 22-30 are system version for performing the claimed method as in claims 1-14 addressed above, wherein all claimed limitation functions have been addressed and/or set forth and certainly such system would need to run and/or practice such function steps disclosed by reference above (e.g., Wu's computer system has to comprise compiler, dynamic (just-in-time) compiler, loader and profiler to compile source code in Fig.3 and 4; to generate native code as in Fig.7 ; to load to execute and determine the "hot type"/frequency. Thus, they are also anticipated by Wu.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zheng Wei whose telephone number is (571)

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270-1059 and Fax number is (571) 270-2059. The examiner can normally be reached on Monday-Thursday 8:00-15:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571- 272-1000.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Z. W./
Examiner, Art Unit 2192

/Tuan Q. Dam/
Supervisory Patent Examiner, Art Unit 2192